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ship with this letter, I shall make no apology to your Lordship upon this head; and only take the liberty of assuring you, that I am, with the most profound respect,

my Lord,

your Lordship's most obliged

and obedient servant,

William Watfon.

CII. *An Account of the Case of the late Rev. James Bradley, D. D. Astronomer Royal: in a Letter to the Right Honourable George Earl of Macclesfield, President of R. S. from Daniel Lysons, M. D.*

My Lord,

Read Dec. 16, 1762. **T**HE respect, with which the late Dr. Bradley astronomer royal, and Savilian professor of astronomy in this University, was treated by the learned of all countries, and the esteem, in which he was held by your Lordship, and the Society over which you preside, must naturally make the world desirous to be acquainted with the circumstances of that illness, which occasioned his death, especially as his disorder was in itself rather uncommon.

Under these circumstances I flatter myself, that I shall do what will be very agreeable to your Lordship,  
and

and the Society, if I lay before you, and that learned body, a detail of the several particulars attending the case of so very worthy, and excellent a member, collected as well from the best enquiries I could make, as from the observations made by myself, who attended him in his last hours, and assisted at the opening of his body.

He had laboured under a great oppression of spirits for a long time; and for several years before his death frequently complained of a pain in his back, sometimes attended with difficulty in the discharge of his urine, which he apprehended to proceed from the gravel.

On wednesday June the thirtieth 1762. he rode out for the air, and upon coming home complained of pain in his back, and made a large quantity of water. At five o'clock the next morning he found himself labouring under a total suppression of urine, from which time he never voided any without the assistance of the catheter. With its assistance however about a quart was drawn off every twelve hours, excepting one intermission; when upon account of the difficulty of introducing the catheter, none was drawn off from friday morning July the ninth, 'till eight o'clock on the saturday evening. But both before and after that time the urine was regularly drawn off every morning and evening to the time of his death, on the thirteenth of July.

During his illness he often complained of pains in the abdomen. And his head was frequently disordered, especially when a stool was coming away; but after that had passed off, he was always more cool and reasonable.

reasonable. It was the opinion of Dr. Jones, who attended him constantly in the country, as well as of Dr. Lewis, and myself, who visited him occasionally from Oxford, that his pains were inflammatory, though not violently so. But where the inflammation was exactly seated, we could not precisely determine; as it seemed often to shift it's situation, and the patient was himself incapable of giving us the necessary description, his weak state obliging him to signify his meaning more by signs than words, and those not always intelligible. As nothing positive could therefore be said with regard to the seat of the disorder, the friends of the deceased desired, that his body might be opened; and Doctor Jones and myself being present at the operation, I minuted down such appearances, as presented themselves to our view, and collected the following observations.

The small intestines, the exterior coat of the stomach, and concave part of the left lobe of the liver, were all considerably inflamed. The gall bladder was very large, and full of bile.

The fat, inclosed in the cellular membrane, surrounding the right kidney, was considerably wasted, and very much indurated; and appeared to adhere more firmly than usual to the external surface of the kidney. Upon removing this kidney with it's fat, all the parts adjacent appeared much inflamed. The whole kidney was soft, and contained matter, so diffused through its whole substance, that it issued out upon pressure from every part; in the same manner as an absorbed fluid does from the pores of a sponge. No stone, or gravel, were found in the pelvis, or any other part of the right kidney.

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The left kidney was nearly of the same pulpy substance with the right; equally contained matter, though not so large a quantity, and was equally free from stone, and gravel.

The vena cava, and the emulgent vein of the left kidney, were remarkably large.

The aorta was ossified near its bifurcation into the crural arteries.

Two unnatural tumors grew on the left and lower side of the pelvis internally, near the junction of the os pubis with the ischium. They were contiguous to each other; in circumference severally something less than a walnut; and both taken together were three inches or more in length. When cut through they had the appearance of glands, and one of them contained matter, disseminated through its substance, in the same manner as the kidneys.

Upon examining the bladder, the prostate gland was found enlarged, and indurated, and the internal coat of the bladder itself inflamed. But neither the bladder, nor the ureters, contained any stone, or gravel.

No morbid appearance was observed in the liver, lungs, or any other of the parts, besides those above mentioned.

From the above observations it appears, that the case before us was a general inflammation in most of the contents of the abdomen, and that the suppression of urine was probably a symptom, in consequence of the swelling and induration of the prostate gland; which thereby closing the neck of the bladder, made the use of the catheter necessary. That the constitution was become extremely purulent. But as these collections  
of

of matter do not appear to have destroyed any of the vital functions, so it seems reasonable to believe that the immediate cause of his death was a general inflammation and consequential sphacelus in some of the abdominal contents.

Instances of abscesses formed in the kidneys from the lodgment of calculi are not unfrequent; but then the papillæ of the kidneys being irritated and inflamed by the stone, and in consequence thereof the secretory tubes dissolved into matter, the secretion is thereby destroyed and a suppression of urine always takes place in regard to that kidney.

Two cases are indeed mentioned, the one by eustachius, the other in the *Miscellanea curiosa*, where the kidneys, in one of the subjects, are said to have been found putrid, in the other, semiputrid, and no calculus in either. Such cases as these are very uncommon, and bear some resemblance to the case before us; in which it is very remarkable, that though matter was intimately distributed through every part of the kidneys, yet the tribuli forming the urinary organs of secretion remained sound, and properly qualified to perform their functions, even till death; as appeared by the urine being drawn off every twelve hours, till near the time of the patients decease, and the bladder being found distended with urine upon opening the body. Whereas in the case recorded in the *Miscellanea curiosa*, after a total suppression of urine, the bladder was found small and contracted, no urine having been excreted from the kidneys into it.

That the matter did not in the present case infiltrate into, or in any manner disturb, the urinary secretion

secretion is evident; since no pus was ever observed in the urine either before, or after the introduction of the catheter. How this extraordinary case comes to be so particularly circumstanced seems worthy of consideration. If the singularity of it shall merit any regard from your Lordship, and the gentlemen of the Society, it will give the highest satisfaction to,

my Lord,

Your Lordship's

All Souls College,  
Nov. 24th, 1762.

most obedient and

most humble servant,

Daniel Lyfons.

CIII. *Experiments to prove that Water is not incompressible; by John Canton, M. A. and F. R. S.*

Read Dec. 16,  
1762.

HAVING procured a small glass tube of about two feet in length, with a ball at one end of it of an inch and a quarter in diameter; I filled the ball and part of the tube with mercury; and keeping it with a Fahrenheit's Thermometer, in water which was frequently stirred, it was brought exactly to the heat of 50 degrees; and the place where the mercury stood in the tube, which was about  $6\frac{1}{4}$  inches above the ball, was carefully